

Data Evaluation Documentation and Findings

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Section I: Reason For Evaluation (Summary of Flagged Data):										
1) K-S Test: Pass/Fail?									Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>
Units Evaluation Flags										
Ac-228	Bi-212	Bi-214	Cs-137	K-40	Pb-212	Pb-214	Ra-226	Total		
								0		
Days Evaluation Flags										
Ac-228	Bi-212	Bi-214	Cs-137	K-40	Pb-212	Pb-214	Ra-226	Total		
								0		
2) Logic Tests: Pass/Fail?									Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>
Logic Test 1: Were FSS samples collected on the same day? Observation: FSS samples were collected on 07/19/2008.									Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Logic Test 2: Were FSS samples collected on the same day or after confirmatory/biased samples were collected? Observation: Final set of confirmatory/biased samples were collected on 07/11/08									Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Logic Test 3: Were samples collected before they were counted? Observation:									Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Logic Test 4: Were all FSS samples analyzed within 2 working days? Observation: FSS samples were analyzed on 07/21/2008.									Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Logic Test 5: Were samples counted within 2 weeks of sample collection? Observation:									Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Logic Test 6: Is the mass of the sample reported by the onsite lab the same as the mass reported by the offsite lab? Observation: Offsite lab mass was not reported.									Yes <input type="checkbox"/>	No <input type="checkbox"/>
3) Time Series Plots: Pass/Fail?									Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>
Bi-214	Anomalies or unusual trends identified?								No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
	Notes:									
Ac-228	Anomalies or unusual trends identified?								No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
	Notes:									
K-40	Anomalies or unusual trends identified?								No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
	Notes: The data range for K-40 from 4.68 through 14.96 pCi/g.									
4) Historically Significant Site Location: Yes/No?									No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
Was a known radiation cleanup performed at (or near) this site? If yes, where?									No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
Is the sewer line connected to or downstream from a radiologically-impacted building? If yes, which building? Building 366 (formerly referred to as Building 351-B) was previously used by the Naval Radiological Defense Laboratory for Instrument Calibration and Management Engineering and Comptroller Department. No									No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>

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reasonable potential for contamination based on a review of the Historical Radiological Assessment.		
5) Allegation: Yes/No?	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
If yes, description: Suspect worker involved with data collection.		

Section II: Evaluations Performed			
1) Other Statistics Results		Pass <input type="checkbox"/>	Fail <input checked="" type="checkbox"/>
Box Plots	Anomalies or unusual trends identified? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Notes: Sample distribution of Final Systematic samples is slightly more variable compared with other sample types of Bias and Characterization. One outlier was identified for Bi-214 and Ac-228.		
Normal Quantile Plots	Anomalies or unusual trends identified? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Notes:		
2) Additional Database Review Performed?		No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
Review objectives: Evaluate Cs-137 data			
Observations: Cs-137 results were reviewed because Cs-137 was detected in building 366. The results and graphical plots were reviewed, and no unusual information was identified.			
3) Adjacent Survey/Trench Unit Review		Pass <input type="checkbox"/>	Fail <input checked="" type="checkbox"/>
List of Adjacent Units: TU070, TU100, and TU102.			
Was a review of adjacent unit's data performed? Yes			
Anomalies or unusual trends identified?		No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
Notes: The static data results for TU 102 is inconsistent compared with the adjacent trenches. The lowest static count was reported for TU102 at 2,471 cpm compared to 3,300 cpm for TU100 and 4,366 cpm for TU070. The highest static count was reported at 6,531 cpm for TU100 compared to 5,377 cpm for TU102. Only TU102 identified one sample reporting Ac-228 concentrations below zero. TU 101 and TU 102 reported multiple rounds of sample collection and remediation prior to performing the FSS while TU070 only one set of FSS sampling.			
4) SUPR or FSSR Review Performed? – March 2011 Final SUPR			
Summary of Excavation / Sampling Activities	No measurements above the investigation level were identified during the performance of gamma scans in TU101. Visual Sample Plan (VSP) was used to generate 18 systematic sample locations based on a random start point and a triangular grid. Three of the systematic samples collected from this trench unit had activity above the release criteria for Ra-226 at levels ranging from 1.5 to 2.1 picocuries per gram (pCi/g). Eleven cubic yards of material was remediated from the impacted area, and six post-remediation samples were collected. None of the sample results identified activity above the release criteria for any radionuclide of concern (ROC). VSP was used to generate the final 18 systematic sample locations based on a random start point and a triangular grid. None of the sample results identified activity above the release criteria for any ROC.		
Gamma Static Data Observations:	The static survey was performed on 07/19/2008 at 10:07 am prior to the collection of the Final Systematic samples. The highest count was recorded at 5,842 cpm for sample location 029. No signature and date from site RSO was recorded on this survey.		
Gamma Scan Data Observations:	The scan survey was performed on 07/19/2008 Scan range for 2350-1 Instrument is 2,970 – 6,590 cpm, exceeding the 3-sigma investigation level for 2350-1 instrument (6,161 cpm). No signature and date from site RSO was recorded on		

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		this survey. No gamma scan data was available for review to compare with the Final Systematic samples specific dataset static/scan results.	
List of Excavation / Overburden Units Used for Backfill		ES033 was used to backfill TU101.	
Onsite / Offsite Lab Data Comparison:		Data comparison is relatively close for Ac-228, Bi-214, and K-40.	
Scan / Static Surveyor Name:		R. Zahensky	
Sampler / Surveyor Name:		Not provided in the SUPR.	
5) RACR or CSR Review Performed? – December 2011 Final RACR			
List of Excavation / Overburden Units Created from Excavation:		Excavated soil from TU101 was used to generate ES108 (backfilled)	

Section III: Conclusions and Recommendations			
Summary of Findings: Based on the findings of this evaluation, no evidence of potential data falsification was found. No reasonable potential for contamination based on a review of the Historical Radiological Assessment.			
<input checked="" type="checkbox"/> No Further Action	<input type="checkbox"/> Reanalyze Archived Samples	<input type="checkbox"/> Confirmation Sampling	<input type="checkbox"/> Physical Inspection of Archived Samples
<input type="checkbox"/> Other Recommendations:			
Additional Information Required: None.			

Completed by: Bachir Badaoui **Date:** 06/28/2017

Reviewed by: Alejandro Lopez, CHP **Date:** 08/31/2017

Approved by: Matt Liscio **Date:** 09/11/2017

Acronyms:

Ac	Actinium (e.g., Ac-228)
B	Former Building (or other site) Surface Soil Survey Unit
Bi	Bismuth (e.g., Bi-214)
Cs	Cesium (e.g., Cs-137)
CSR	Construction Summary Report
COC	Chain of Custody
ESU	Excavation Survey Unit
FSS	Final Status Survey
FSSR	Final Status Survey Report
K	Potassium (e.g., K-40)
OB	Overburden Unit
Pb	Lead (e.g., Pb-212)
pCi/g	picocuries per gram
Ra	Radium (e.g., Ra-226)
RACR	Remedial Action Completion Report
ROC	radionuclide of concern
S	Sewer or Storm Drain Removal Survey Unit
SUPR	Survey Unit Progress Report

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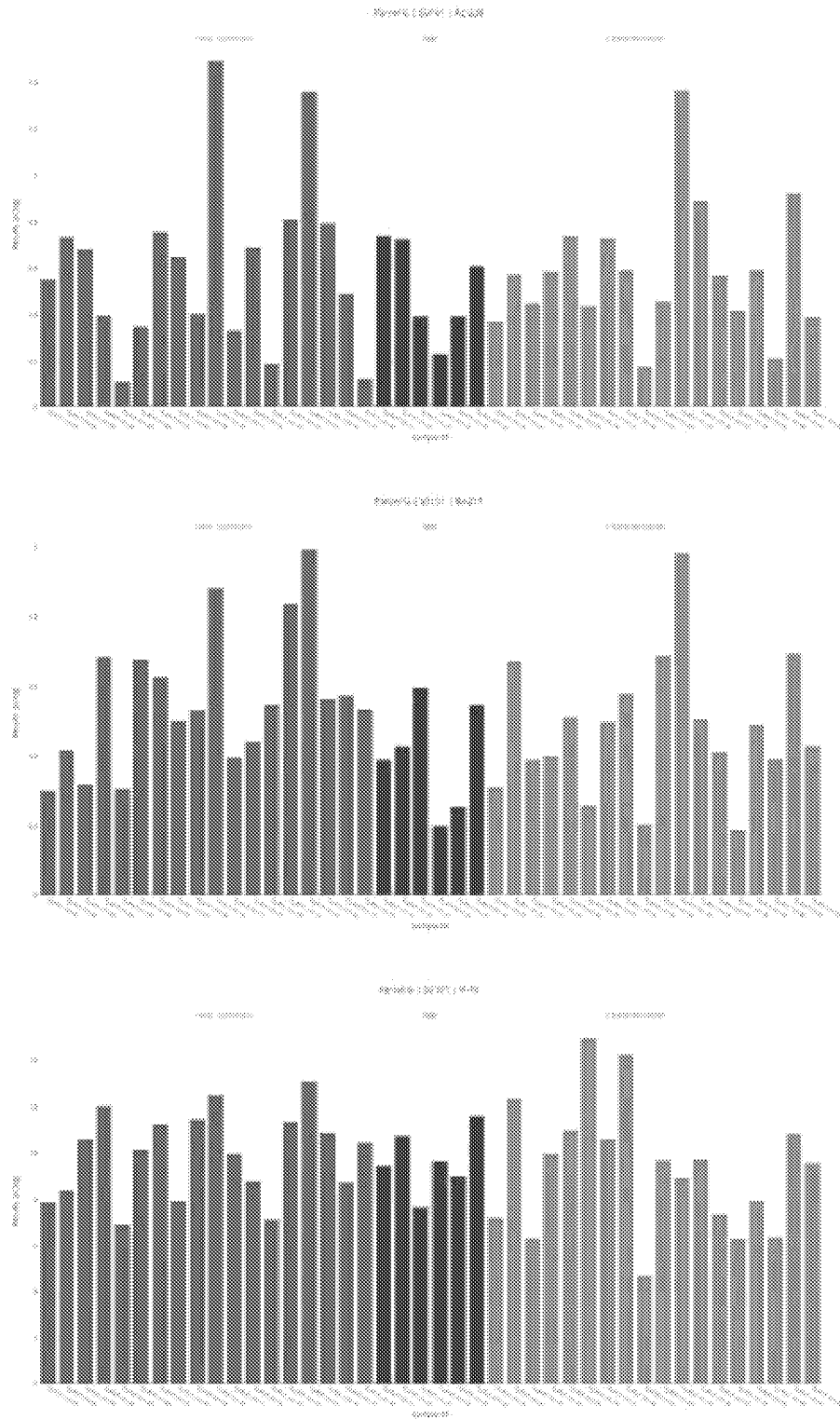
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TU Trench Unit
VSP Visual Sample Plan

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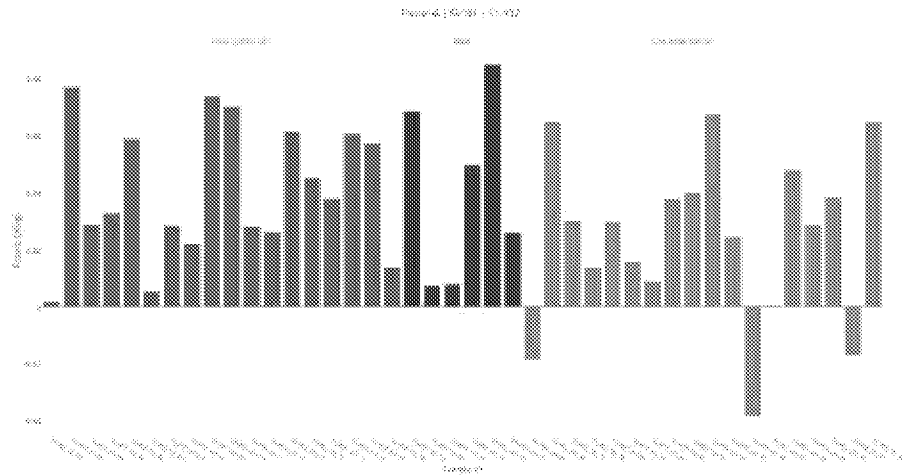
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Time-Series Plots



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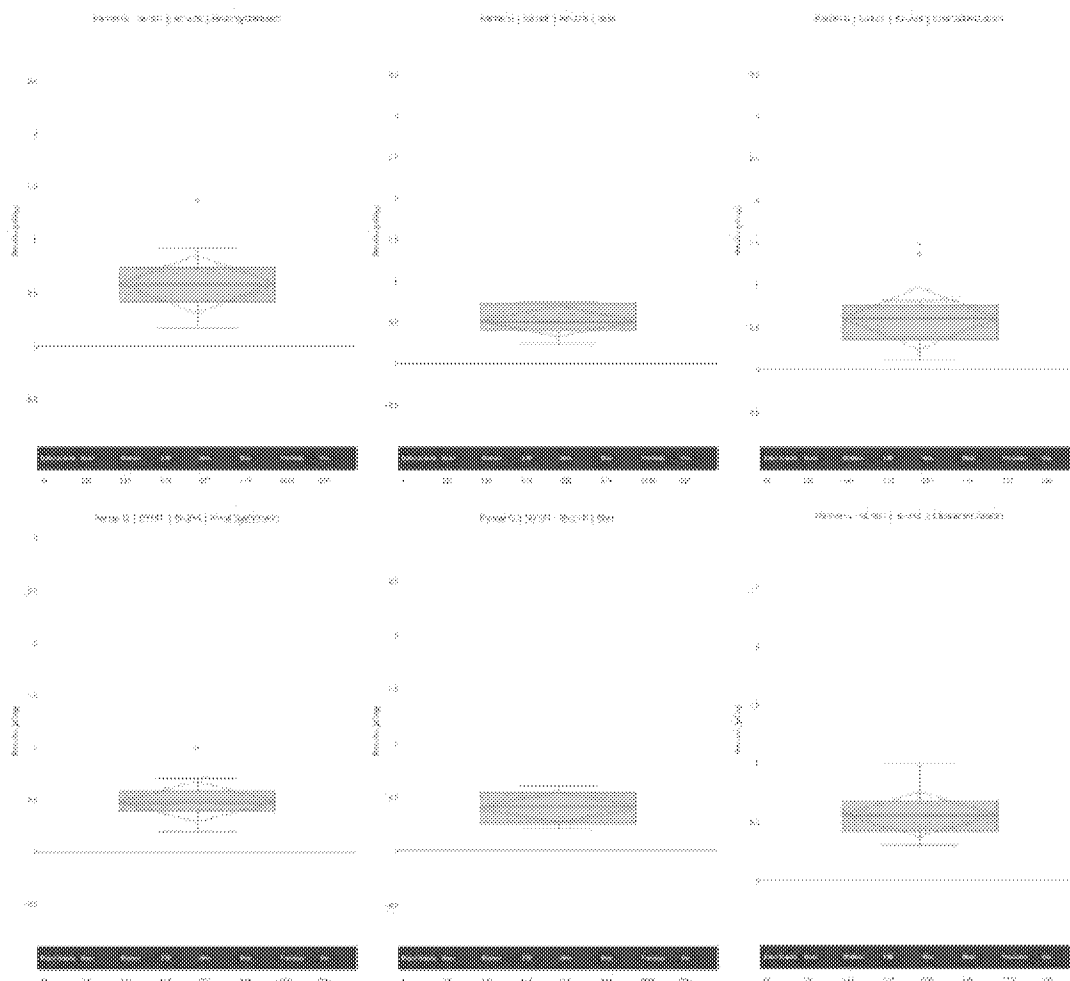
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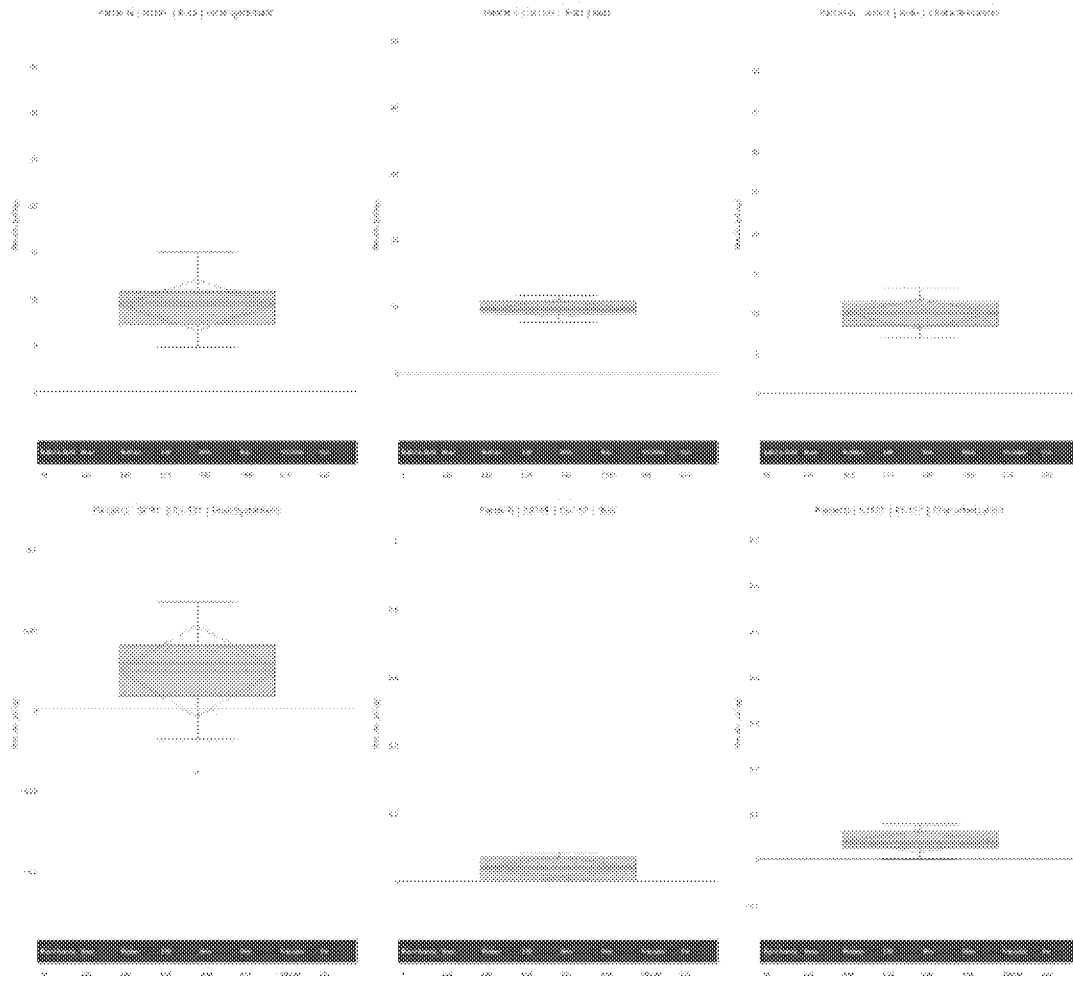
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Box Plots



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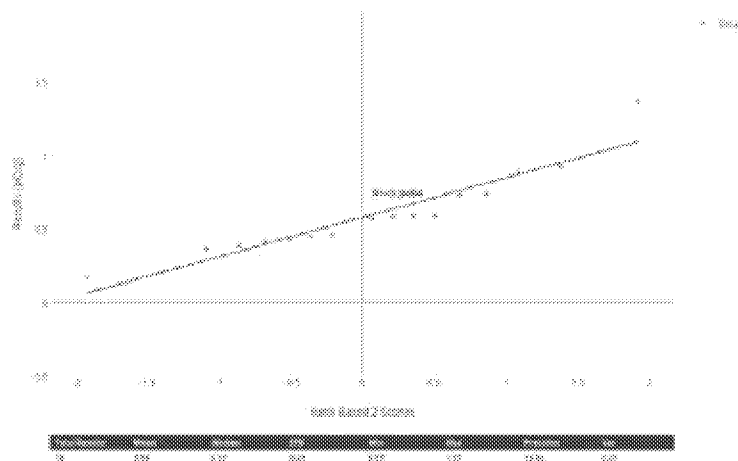


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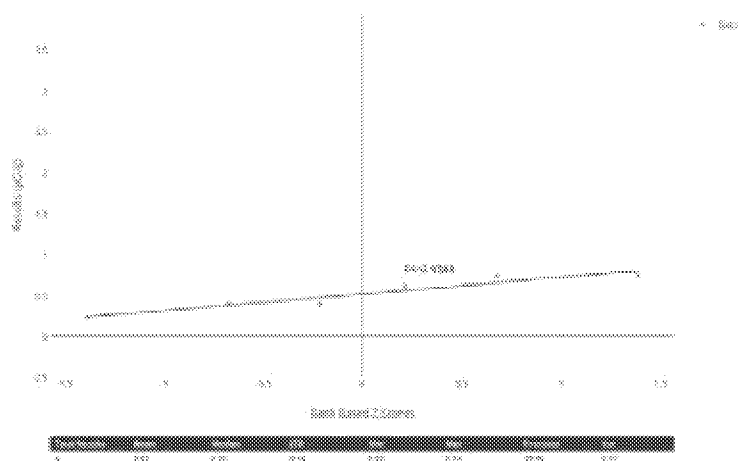
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Normal Quantile Plots

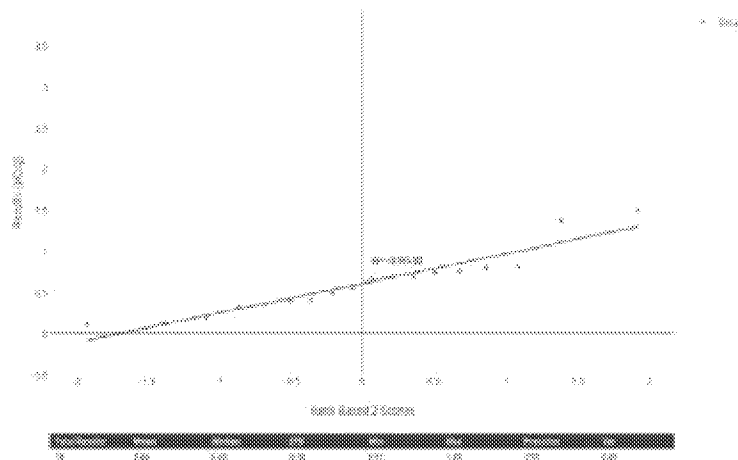
Parcel G | S0101 | Ar-238 | Polar Systematic



Parcel D | S0101 | Ar-238 | Base

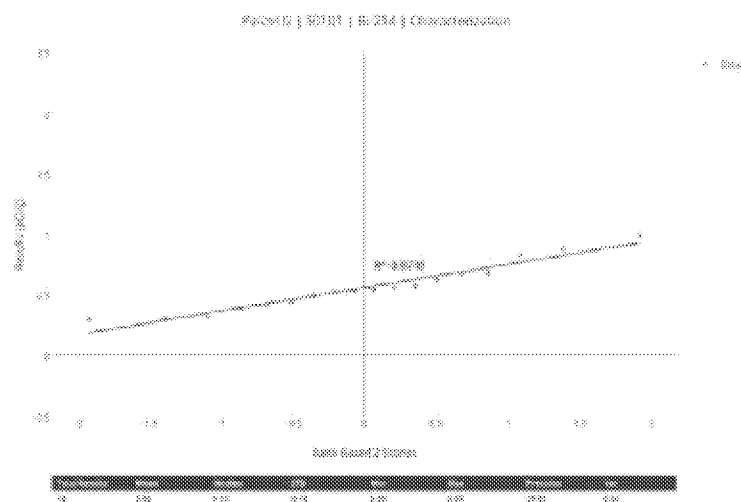
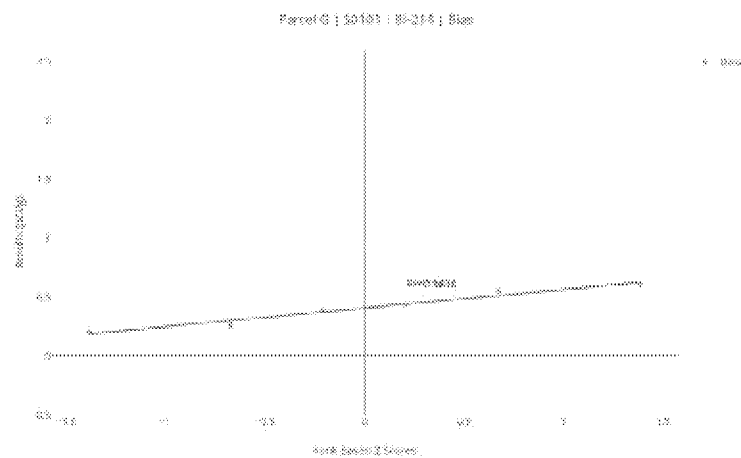
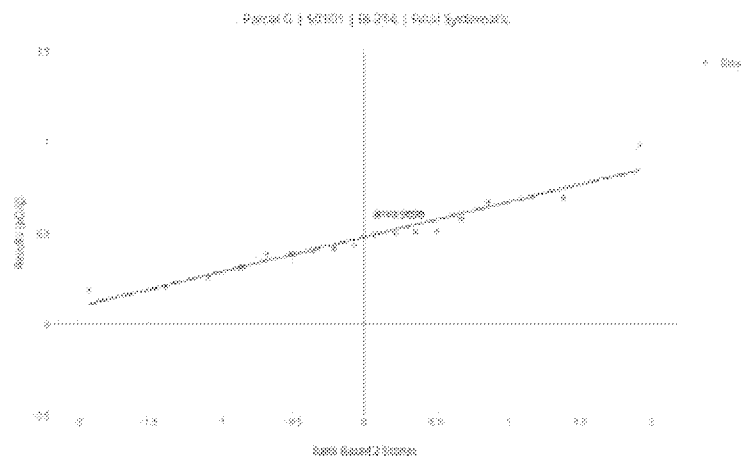


Parcel G | S0101 | Ar-238 | Characterization



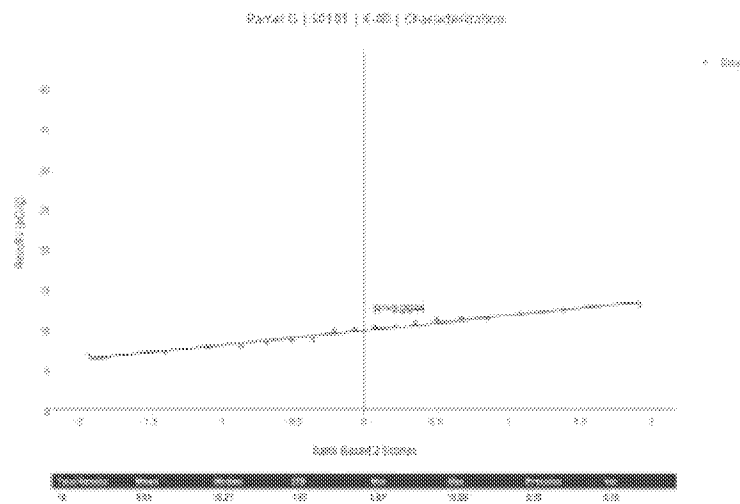
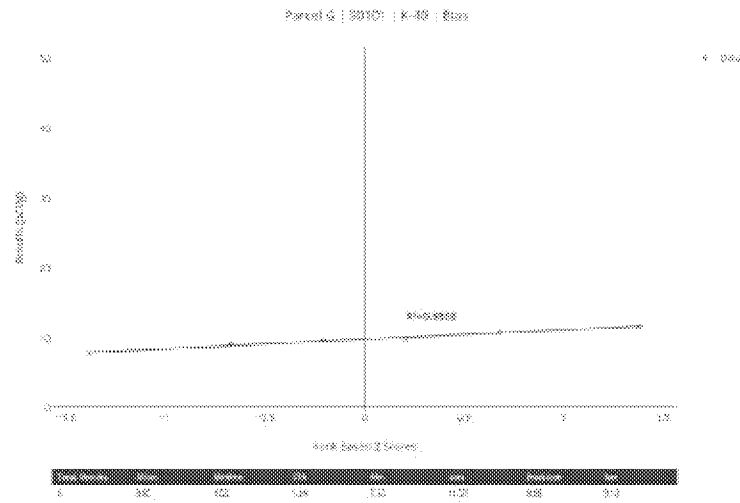
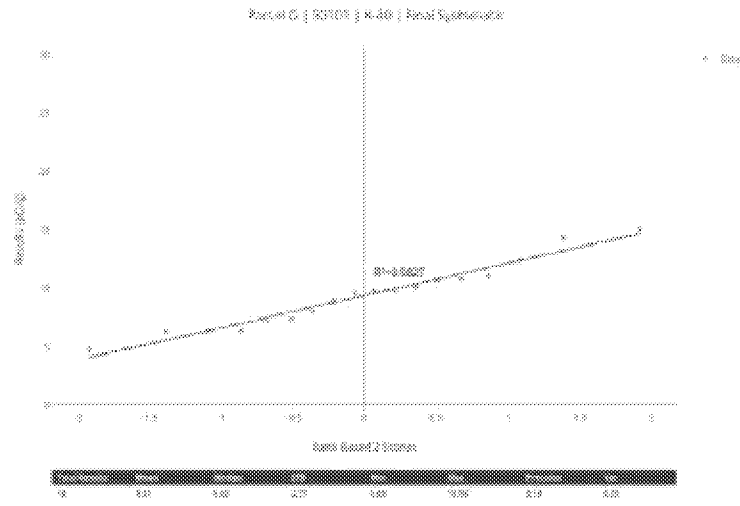
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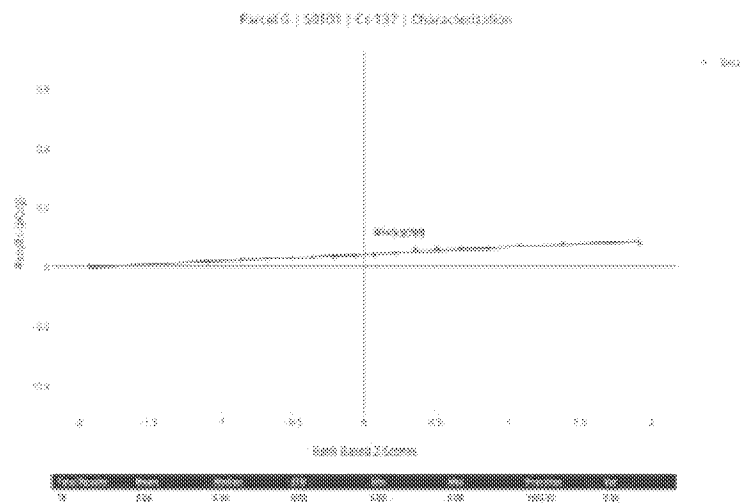
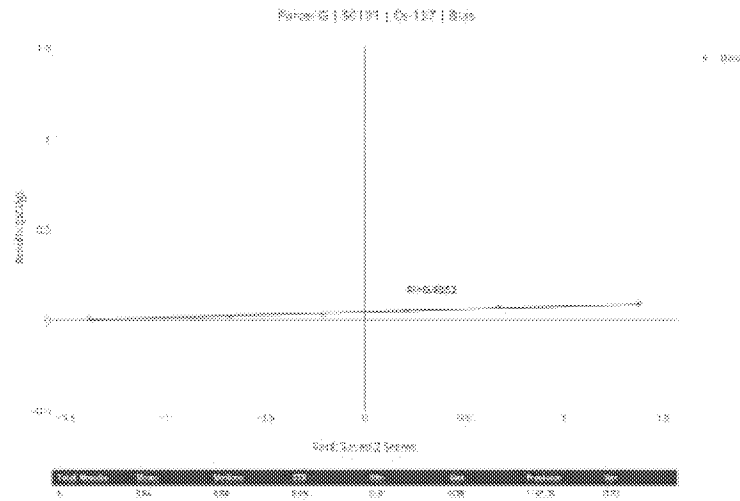
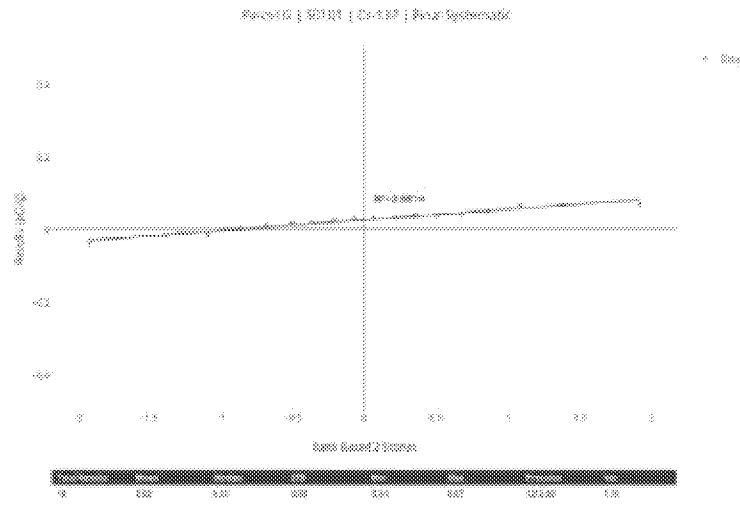
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